REMARKS

Claims 1-6, 11-23, 26-29 and 32-38 are pending in the application. By this Amendment, claims 1, 11, 17 and 22 are amended and claims 7-10, 24-25 and 30-31 are canceled without prejudice or disclaimer. Various amendments are made for clarity and are unrelated to issues of patentability.

Entry of the amendments is proper under 37 C.F.R. §1.116 because the amendments: (1) place the application in condition for allowance; (2) do not raise any new issues requiring further search and/or consideration; and/or (3) place the application in better form for appeal, should an appeal be necessary. More specifically, the above amendments incorporate features of dependent claims 7-10, 24-25 and 30-31 into independent claims 1, 11 and 22. Thus, no new issues are raised. Entry is thus proper under 37 C.F.R. §1.116.

The Office Action rejects claims 1-38 under 35 U.S.C. §103(a) over ETSI TS 125 322 version 5.1.0 (2002-06) (hereafter ETSI) in view of U.S. Patent No. 6,744,730 to Le et al. (hereafter Le). The rejection is respectfully traversed with respect to the pending claims.

The present specification may relate to a method for efficiently controlling a buffer overflow by using a window super field (SUFI) belonging to one of RLC status PDUs. Applicant is providing the following non-limiting potential situations in which features of the present specification may be used. For example, when an extreme situation occurs, namely, if an FX window size having set becomes drastically large, a problem of time delay may occur when reassembling segmented RLC SDUs and forwarding such data to an upper protocol (i.e., a problem may occur in case of returning to an existing data transfer rate).

In case where an RLC PDU, which a receiving end wants to receive, has been received a latest among other PDUs belonging to the RX window, and an ACK SUFI may be set to a sequence number indicating an upper limit of a current window size for transmission under a situation that a transmitting side has requested for an acknowledgement of data so far received, a TX window is newly updated and a transmission can be reinitiated. Under this situation, data loss may occur due to an internal protocol data processing delay.

In order to prevent the data loss caused by an internal RLC protocol delay, the receiving side RLC layer may send a window SUFI indicating that a window size should be set to 1, together with the ACK SUFI. Afterwards, data within the RX window in the RLC may all be processed to be sent to an upper layer. Accordingly, the transmitting side RLC layer retransmits the window SUFI indicating that the window size should be set to the same value as the previously set window size, so as to allow an initiation of the same transmission as performed.

Independent claim 1 recites receiving data units having serial numbers lying in a range of a receiving window, transmitting window size control information from a receiver to a transmitter based on a state of a receiving buffer that corresponds to the receiving window, and varying a transmitting window size of the transmitter according to the transmitted window size control information. Independent claim 1 also recites that the window size control information includes window size downward setting information if a receiving buffer is in an overflow and a downward window size is 1, wherein the window size control information includes window size upward setting information if a receiving buffer is not in an overflow and an upward setting level

is up to an upper level, and the window size control information is transmitted simultaneously

with acknowledgment information.

The applied references do not teach or suggest at least these features of independent

claim 1, which may include features from previous dependent claims 7-10. ETSI does not teach

or suggest transmitting window size control information, wherein the window size control

information includes window size downward setting information if a receiving buffer is in an

overflow and a downward window size is 1, wherein the window size control information

includes window size upward setting information if a receiving buffer is not in an overflow and

an upward setting level is up to an upper level. The Office Action (on pages 4-5) states that

ETSI does not teach or suggest that window size control information includes window size

downward setting information if a receiving buffer is in an overflow state or the window size

control information includes window size upward setting information if a receiving buffer is not

in an overflow state.

The Office Action then cites Le's col. 2, lines 23-41 as teaching that a receiving host 18

instructs a sending host 10 to increase the window size when the receiving buffer is near empty

and instructs the sending host 10 to decrease the window size when the receiving buffer is near

full. However, this does not suggest the missing features. For example, Le does not teach or

suggest that the window size control information includes window size downward setting

information if a receiving buffer is in an overflow and a downward window size is 1. Le also

does not teach or suggest that the window size control information includes window size upward

setting information if a receiving buffer is not in an overflow state and and/or an upward setting

level is up to an upper level. Le does not teach or suggest the features of independent claim 1

missing from ETSI. Thus, independent claim 1 defines patentable subject matter.

Independent claim 11 recites that window size update information is transmitted from a

receiving entity to a transmitting entity based on a processing speed by the receiving entity of

data units stored in a receiving buffer, wherein acknowledgment information is transmitted

simultaneously with the window size update information, the acknowledgment information

controlling transmission of additional data units from the transmitting entity to the receiving

entity, transmission of the additional data units controlled based on the window size update

information. Independent claim 11 also recites that the window size update information includes

window size downward setting information if a receiving buffer is in an overflow and a

downward window size is a 1, and wherein the window size update information includes window

size upward setting information if a receiving buffer is not in an overflow and an upward setting

level is up to an upper level.

For at least similar reasons as set forth above, ETSI and Le do not teach or suggest at

least these features of independent claim 11. More specifically, ETSI and Le do not teach or

suggest that that the window size update information includes window size downward setting

information if a receiving buffer is in an overflow and a downward window size is a 1, and

wherein the window size update information includes window size upward setting information if

a receiving buffer is not in an overflow and an upward setting level is up to an upper level. Thus,

independent claim 11 defines patentable subject matter.

Independent claim 22 recites receiving one or more protocol data units (PDUs) from a transmitting radio link control (RLC) entity, checking a state of a receiving buffer for storing the one or more PDUs, and transmitting window size control information to the transmitting RLC according to a state of the receiving buffer, the window size control information to vary a transmitting window size of the transmitting RLC entity for transmitting additional PDUs to be stored in the receiving buffer. Independent claim 22 also recites that acknowledgment information is transmitted simultaneously with the window size control information, the acknowledgment information controlling transmission of said additional PDUs based on the varied transmitting window size, and that the window size control information includes window size downward setting information if a receiving buffer is in an overflow and a downward window size is 1, wherein the window size control information includes window size upward setting information if a receiving buffer is not in an overflow and an upward setting level is up to an upper level.

For at least similar reasons as set forth above, ETSI and Le do not teach or suggest all the features of independent claim 22, which may include features from previous dependent claims 24-25 and 30-31. More specifically, ETSI and Le do not teach or suggest that the window size control information includes window size downward setting information if a receiving buffer is in an overflow and a downward window size is 1, wherein the window size control information includes window size upward setting information if a receiving buffer is not in an overflow and an upward setting level is up to an upper level. Thus, independent claim 22 defines patentable subject matter.

For at least the reasons set forth above, each of independent claims 1, 11 and 22 defines patentable subject matter. Each of the dependent claims depends from one of the independent claims and therefore defines patentable subject matter at least for this reason. In addition, the dependent claims recite features that further and independently distinguish over the applied references.

CONCLUSION

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Favorable consideration and prompt allowance of claims 1-6, 11-23, 26-29 and 32-38 are earnestly solicited. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
KED & ASSOCIATES, LLP

David C. Oren
Registration No. 38,694

P.O. Box 221200
Chantilly, Virginia 20153-1200
(703) 766-3777 DCO/kah
Date: February 26, 2009
Please direct all correspondence to Customer Number 34610